THE CHEMIST

MAY 1950 VOLUME XXVII No. 5

DR. WAYNE E. KUHN

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(see page 155)

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Publication of

THE AMERICAN INSTITUTE OF CHEMISTS, INC.
60 East 42nd Street, New York 17, N. Y.

Volume XXVII | May 1950 | Number 5

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Entered as second class matter April 8, 1936, at the Post Office at New York, N.Y., under Act of August 24, 1912. Issued monthly at 60 East 42nd Street, New York 17, N. Y. Subscription price, $2.00 a year to members. $3.00 to Non-Members. Single copy, this issue $0.25. Copyright, 1950 by THE AMERICAN INSTITUTE OF CHEMISTS, INC.

SCHEDULED FOR EARLY ISSUES

The Increasing Responsibilities of the Chemist, by Ralph Lamenzo, F.A.I.C.
The Chemistry of Intelligence, by Dr. Edward Podolsky
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What the AIC Can Do for the Government Chemist, by Dr. J. David Reid, F.A.I.C.
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Employment Contracts, John A. Dienner, F.A.I.C.
Our Synthetic Dye and Pigment Industry Challenges the Chemist, by Dr. Hans Z. Lecher, F.A.I.C.

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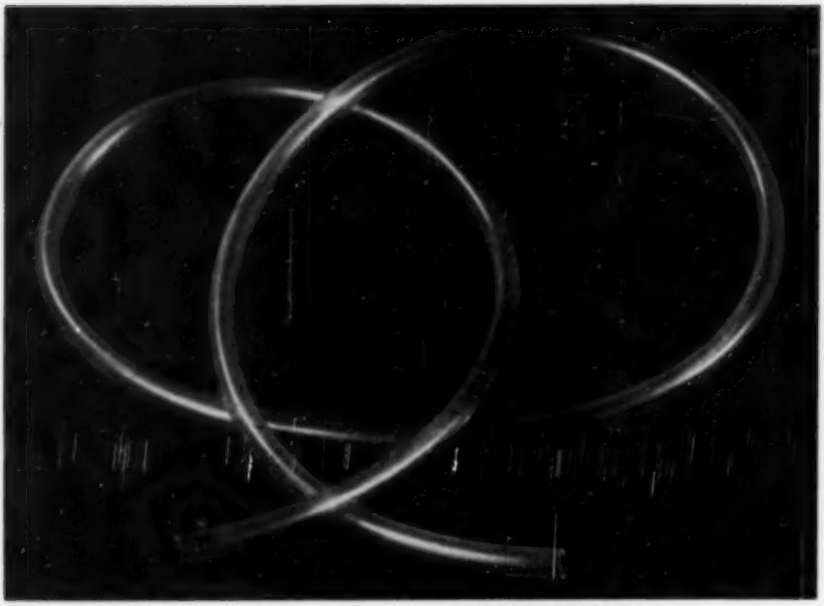
Cover Picture

Dr. Wayne E. Kuhn, F.A.I.C., manager of the Technical and Research Division of The Texas Company, New York, N.Y. will receive the 1950 Honor Scroll of The New York Chapter, AIC, at a dinner meeting to be held in the Hotel Commodore, New York, N.Y., May twenty-fourth.

Proceedings of the Annual Meeting

The proceedings of the Twenty-seventh Annual Meeting of THE AMERICAN INSTITUTE OF CHEMISTS, held May 11th and 12th, at the Hotel New Yorker, New York, N.Y., which features the award of the Gold Medal of the INSTITUTE to Dr. Walter J. Murphy, F.A.I.C., American Chemical Society Editor, will appear in the June issue of THE CHEMIST. Abstracts or complete papers of the talks presented at this two-day meeting will be published. Extra copies of this issue should be ordered immediately, so that enough copies may be obtained to supply all who wish them.



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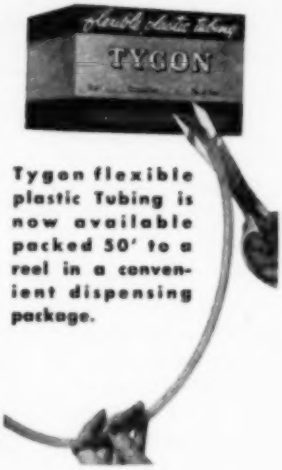

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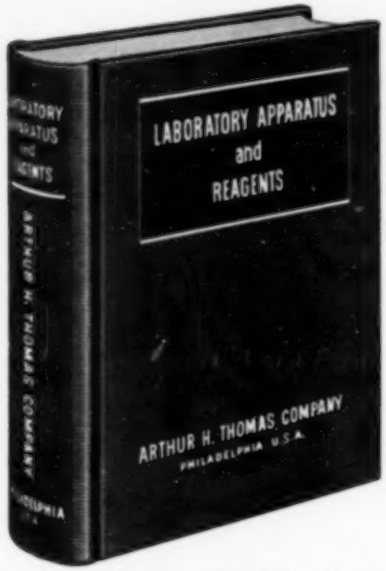

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EDITORIAL

The Education of a Chemist

Dr. Raymond E. Kirk, F.A.I.C.

Vice President A.I.C.

Head, Department of Chemistry, Polytechnic Institute of Brooklyn.

THE CHEMIST needs to be educated both to be a chemist and to be a well-rounded human being. These needs demand careful thought, skillful planning and persuasive counseling. The sequences in courses are so many and so important, the skills and techniques of chemistry are so important, and the time in college so short that the "free elective system" should not be relied upon to produce well-rounded and well-trained chemists. Few thoughtful chemist-teachers will defend a program that allows the neglect of calculus, differential equations, physics and physical chemistry that now characterizes the college training of many who think themselves to be trained to enter the profession of chemistry. The products of such "liberal" training will often be found to have had a plethora of isolated "courses" in a wide variety of subjects ranging from Spanish to Sanskrit, and from the techniques of hog-calling to the philosophical connotations of the mythology of the Pawnee Indians.

Are these persons "liberally educated?" Do they "understand our world?" Can they write intelligible English? Are they able to speak directly and forcefully? Anyone who defends this kind of training should interview them!

I wish to maintain that more careful sequential organization of the non-technical aspects of the education of a chemist will give a better trained human being and at the same time allow chemists to be adequately trained in mathematics and physics for the modern age in which they are to work. Why limit this training to the few fortunate ones who go on to graduate school?

Let me survey for you the so-called "liberal training" that scientists are asked to support in the name of a "well-rounded" education. In freshman composition, the boy from a Nebraska farm is asked to write about the architecture of a French cathedral, or the boy from Brooklyn is told to compose an essay on the prairies. Why not rather open the eyes of these young folks to the esthetic appeal of cathedral naves and grassy plains. Do we ask first year science students to write about the

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synthesis of a rare new chemical? If we did, we would expect to get a rehash out of a reference book! Yet most courses in English composition have little, if any, reference to previous experience. Thereafter the elective system allows the youth to select the courses in English that meet after 11:00 a.m. and in rooms on the first and second floors. This in name of "breadth" of training!

Does one really learn to understand cultural anthropology by taking isolated courses in the humanities? Does one gain an insight into the economics of today by listening to lectures on the ideas of Adam Smith or Marx, or of Mill or Keynes? Not if we mean the economics of 20th century industry! It has been well said that all are equally outmoded in a world of which they never dreamed.

What is most needed in the education of the chemist is a well-rounded and carefully planned program outside his major field; one that will take one-half the time and be ten times better than that now often found and often worshipped by college faculties and professional pundits in the name of "liberal education."

The Fifth South American Congress of Chemistry will be held in Lima, Peru, in 1951, under the sponsorship of the Government of Peru and of the Universidad Nacional Mayor de San Marcos. La Sociedad Quimica del Peru will be in charge of arrangements. It has appointed an Executive Committee, with Dr. Angel Maldonado, head of the Universidad Nacional Mayor de San Marcos, as president.

The New York Chapter of the Armed Forces Chemical Association has elected the following officers: President, Edwin C. Kenton, Evans Research & Development Corporation; Vice-president, Col. Leslie Sutherland, Barrett Division, Allied Chemical & Dye Corporation, and Secretary, Walter E. Spicer, F.A.I.C., Lambert Pharmacal Company.

Does Present Education Properly Train Chemists for Industry

Part I

Dr. C. L. Brown, F.A.I.C.

Assistant Manager, Standard Oil Development Company, Research and Development Department, 15 West 41st Street, New York, 19, N.Y.

(Presented at a recent meeting of the New Jersey Chapter)

MY RESPONSE to the question of whether present education gives satisfactory preparation in fields other than the technical to chemists entering industry is rather categorically "no." To offset this response I feel that the technical training is quite adequate.

My negative response regarding nontechnical preparation is based on my opinion that relatively few failures of individuals in industrial research arise from lack of technical skills. By failure, I mean not only relative retrogression but also inability to advance.

My opinion on the inadequacy of training in other than technical skills seems to be bolstered by the opinions of some others. C. F. Braun, president of the large engineering and construction firm, says that "It is a well-known fact in engineering industry that of the people whom industry must reject, only twenty per cent go out because they lack the requisite technical skills. Some eighty percent go out for other reasons. Their attitudes are wrong. They cannot work in harmony with other people. They cannot adapt themselves to their surroundings." Braun speaks of engineers. The percentage may be higher for engineers than for chemists but I feel the number is still greater than fifty per cent.

M. T. Carpenter questioned 110 industrial research leaders on, "What are the most important points for a young technical man to work on in order to get ahead?" The suggestion "ability to get along with others" was most frequently listed and appeared almost twice as often as the answer "Hard Work."

Wickenden and Henninger write in "A Professional Guide for Junior Engineers" as follows:

> "Few engineers fail for technical incompetence; few fail as a result of gross defects and character; most of those who do fall short do so by reason of minor defects which could be avoided or corrected by the individual."

I take as my main point for criticism of the present day education of our industrial research men that there is inadequate training in cooperation. "Cooperation" might be

expanded to the term "social communication."

Teamwork Today

Nowadays it is almost impossible to think of any piece of research work being conducted as the effort of one individual. Research is largely team effort. There may be some individual researchers in educational institutions who are working themselves and directing assistants, perhaps, on projects which appear to have no counterpart elsewhere but it seems impossible that even these could fail to get additional impetus by advice from other branches of the same science or from other sciences.

The research man of today needs and cannot fail to be helped by all the assistance he can receive from his associates not only in the technical but nontechnical fields. A man's failure or success can be determined by ability to take hints from his associates and his competitors, to get rapid service from his typist, from the stockroom clerk, from the mechanic who constructs and services his equipment.

To become more specific for a moment, I think most of us have experienced or have heard at least of some research man who knows in advance, and is not reticent in saying, that a new idea is bound to be a "flop" or that the difficulties attached to its investigation will be insurmountable. Some of us may have also heard of two groups working side by side on the same general problem who failed to appraise each other of very significant discoveries which necessarily had influence on the path of the other group. Some of you may have heard of researchers who have held back important information until it could make the largest effect on the big boss. Some of you may have known researchers who were always sure that their supervisors had no appreciation at all of the world-shattering effects of their latest discoveries.

Philosophically speaking, I believe that the world is in general a "kind" place. The fact that mankind has increased in numbers and in physical comfort, at least, attests to that fact. The world of individuals acts in the main to give assistance and cooperation to those who will reciprocate. The greater the individual's contribution, the more he in turn receives.

Personality Evaluation

Perhaps I seem to have departed from the part the educational institutions can play in training for these nontechnical skills. The first thing as I see it is to develop more consciousness of the need for better training in the field of cooperation or social communications. So I would propose that a system of personality evaluations be instituted in elementary schools, high schools, colleges, and universities. I am aware that something of this character is being

practiced in some of the elementary schools. Pupils' report cards show the teachers' evaluations of accomplishment in English, mathematics, etc., and also their opinions of the pupils' initiative, cooperative spirit, leadership, dependability, and so on. I can see no objection but considerable virtue in extending similar evaluations into the high school years. The college years represent more of a problem but I think it would constitute a serious criticism of college training, if we are to say that it would be impossible to create a satisfactory evaluating scheme for a student's college years. If a teacher is too busy teaching chemistry or mathematics to observe his students under any environment other than a class room, let's have less chemistry and mathematics so as to let the teacher have time for dormitory visits, for going to college mixers, college dances, etc. In the college the evaluations by teachers might be supplemented by ratings from the advanced class members on those in the earlier years. Fraternities might well undertake a program of using older, most highly regarded members for evaluating the personality traits of the newer members. In the graduate school, students and faculty members might well combine to render evaluations of the individual students.

The personality evaluation program is, however, designed merely to get an awareness of the problem of developing improved cooperation and social communication. I think all of us can suggest ways for improving capacity for cooperation during the college years. I feel, in retrospect, that participation in musical organizations, dance orchestras, to be more specific, was of value to me in learning to work with others on a voluntary basis. Literary societies, debating societies, class office duties, scientific groups, and college dances all require some ability to mingle harmoniously with other people. These activities are, however, somewhat extraneous to the business of learning how to make a living. As time goes on, classroom activities must be bent in the direction of requiring impacts between the students, all the students, as contrasted with the present system, which is largely a matter of impact between student and teacher. Much in this direction is being tried in the elementary schools where classes are being stimulated to initiate their own organization and their own cooperative attack on projects in learning.

Training for Cooperation

Perhaps I exaggerate the lack of education in getting along with people. As I think about the matter, however, I wonder whether graduates of elementary schools and high schools have been taught the technic of calling a group together, of developing a preliminary organization of it, of going into a more perman-

ent organization, of taking up the business at hand, of canvassing all those present to obtain all the individual opinions possible and to close the meeting with conclusions established or plans adopted. How many graduates of high schools or colleges ever had any practice in seeking and undergoing an interview for employment? How many of us ever received instruction in writing an application for employment? How many of us ever received classroom assignments involving small groups, which had to meet, decide on a division of the project, do the work, assemble to discuss the results, and prepare written and oral reports on the results? How many graduates have received instruction in the art of conversation, business or social? Perhaps I am suggesting the impossible in saying that these matters can be taught as a part of formal education. I have little doubt that these things can be taught in the schools, can be practiced in the classroom, and the ability in their practice can be evaluated. Let us try to initiate education of this type. There is surprisingly large literature in the general field but most of it does not come to the attention of research men either before or after graduation.

I cannot leave this field without pausing for a moment on a topic not directly pertinent. I am definitely doubtful about whether we are getting adequate preparation for citizenship in our colleges. Most of us want to participate in community and civic affairs and at times in political affairs. How do we go at this? Surely this is such an important matter that we ought to develop the proper techniques during our educational life. I wonder for example if some of our English classes could not devote assignments for writing letters to Congressmen and other public officials outlining the student's opinions about the proper course for legislative action.

In addition to this matter of cooperation, I would like to dwell for a moment on a specific portion of social communication. I feel very strongly that every graduate with a technical degree should have received training in public speaking. A number of industrial research organizations furnish such training during employment hours, but for a number of us individuals the opportunity came too late. The young researcher who can present his accomplishments and ideas in a concise, enthusiastic and clear manner has immediately an advantage over, alas, too many of our good research people who think that the presence of good ideas in their minds should be sufficient to impress their associates and their administrators.

It may seem surprising that I offer no suggestions about chemistry graduates receiving more education in economics, English, sociology,

psychology, history, and the arts such as music and painting. Personally I feel inclined to disapprove the increase of courses in these subjects at the expense of technical courses. The present curricula of high schools, colleges and universities for those interested in being chemists seem to me to be pretty well balanced. I do however wish to draw from both nontechnical and technical course time to get an allowance for the training I propose in "Human Relations."

To return briefly then to my main thesis. Along with Kelly in his book on "The Laws of Intelligent Action," I feel that research men must want to do a job, must know how to do a job and must get along with people. It is my opinion that our schools are doing a good job on the first two requirements but I feel we must do considerably better on the third.

Does Present Education Properly Train Chemists for Industry

Part II

Dr. A. J. Frey, F.A.I.C.

Vice President, Hoffman La Roche, Inc., Nutley, N.J.

(Presented at a recent meeting of the New Jersey Chapter)

IN A PLANT like ours in Nutley, where very complicated organic products are produced synthetically in large scale, and where almost every organic reaction and every unit operation is involved, the performance of the technical staff is of utmost importance. The final results of any chemical manufacturing company depend to a great extent on the capabilities of its scientifically trained technicians. It is, therefore, highly desirable that colleges and universities continually improve their methods of training future industrial chemists and chemical engineers, and it follows that men with extensive industrial experience must help college professors find the way to such improvement.

What are the factors that make the performance of the individual scientific technician a successful one and can these factors be greatly influenced? I believe we can classify these factors into two major categories; one which could be termed "born aptitude" and the other "education." The first class would, up to a certain degree, include such qualities as intelligence, honesty, reliability, assiduity, resourcefulness,

self-discipline, and the talent of getting along with superiors and subordinates. Education, on the other hand, provides the future technician with the fundamentals in chemistry and chemical engineering and education will also considerably improve or correct the "born aptitude," if the college or university training is well conducted.

This "if" indicates that I believe that the answer to the question, "Does Present Education Properly Train Chemists For Industry" is not an unconditional "yes."

I have thoroughly discussed this question with several key men of our organization and we have not been able to find any very obvious or serious shortcoming in the present educational set-up. But, as mentioned before, continued improvements are essential and therefore I will point out some shortcomings and possibilities for improvement. Some organic chemists may get the Ph.D. from highly rated universities and later they will be handicapped in their plant work because they had never heard of such a thing as a theoretical plate. Chemical engineers will, in certain plants, be handicapped by the lack of thorough knowledge of organic chemistry. Many young chemists will have trouble in finding their way through the jungle of literature and may miss some valuable information because they have not been systematically trained for this work.

At this point I would like to mention the considerable advantage the American chemical and allied industry has over the European. This advantage is due to the early establishment of chemical engineering in this country, and its excellent development. But in spite of this great development there still exists a gap between these two branches; that is, between chemistry and chemical engineering, which should be eliminated.

Careers in Chemistry

Another weakness in our present educational system is that the young graduate hardly knows what chemists do in industry. He knows that a chemist may be used in a number of different ways, such as in analysis, research, production, development, sales, promotion, etc. He has, however, no clear picture just what qualifications are required for each of these branches and normally he applies for employment without showing much preference. The plant manager, or the personnel manager, will screen the new men and try to put them in the right spot. But it very often happens that we find a man does not come up to expectations and has to be transferred to another department, whereby valuable time and energy have been wasted. In some large companies they have instituted special courses for young chemists where their aptitudes can be studied. Medium sized and small

plants cannot afford this system and have to go by the trial and error method. I can well conceive the possibility that during the last university year, the students could be taught about the different careers within chemistry and that during the final stages of their studies they could be examined for aptitude as well as knowledge of subject matter. The results of such aptitude tests would be very useful not only to future employers but to students themselves.

Improvements

The suggested improvements in education can be summarized as follows:

1. Increased emphasis on development of the born or basic aptitude.
2. Elimination of the gap between chemistry and chemical engineering.
3. Teaching the student where to find specific information.
4. Preparing the young man for industry by teaching him what the different jobs are and by establishing through long range tests for what particular branch he will be best suited.

Now how can such a program be initiated and successfully fulfilled? This is a question that cannot be answered in a simple way because of the wide divergence among the universities themselves in many regards. Each university has its own weak points and strong ones, too.

In general, I would propose that universities forsee to do two things, if they have not already done so: First, to recruit as many as possible of their teaching staff from industry. That is a difficult assignment but its desirability is obvious. The industrial attitude and point of view is best transmitted to students by teachers who themselves have had industrial experience. Second, that the individual universities establish a close contact with those of their alumni in industry who have acquired considerable industrial experience and whose advanced positions indicate their success. This contact would consist of frequent and frank round table discussions between the faculty and the alumni. In this way, each university could become aware of its own specific shortcomings, both in course content and teaching quality, and could take the necessary steps to correct them. I realize that this, too, is a difficult assignment, but it seems to me to be a good way for universities to find out what they should do. It is the application of the experimental method to their own particular problems and it requires an impartial experimental attitude on the part of the university with no preconceived prejudices and an open mind toward criticism.

Summarizing, we can say that in general the quality of our present education of chemists and chemical

engineers for industry is at a very commendable level. It can be further improved (1) by recruiting of more of the teaching staff from industry and (2) by maintenance of close frequent contact by the university with its experienced alumni in industry for the purpose of uncovering and correcting its shortcomings.

Please Note

Dr. Roger Adams, F.A.I.C., head, Chemistry Department, University of Illinois, was erroneously stated to be the new chairman of the Board of Directors of the American Chemical Society, (THE CHEMIST, April 1950, page 122), when, in fact, Dr. Charles A. Thomas, F.A.I.C., executive vice president of Monsanto Chemical Company, was elected to that position.

Dr. Adams became president of the American Association for the Advancement of Science on January 1, 1950; and in April, he was elected to the position of foreign secretary of the National Academy of Science.

The Southwest Research Institute, San Antonio, Texas, announces that it has established a branch office at 207 Rue de L'Universite, Paris, France, directed by M. Servan G. Cantacuzene, research engineer.

Barth to Gulf Oil

Edwin J. Barth, F.A.I.C., petroleum technologist, has joined the Gulf Oil Corporation, Pittsburgh, Pa., as a technical consultant in the General Sales Division.

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Toxic Materials in Industry

Dr. Lawrence T. Fairhall, F.A.I.C.

Scientist Director, Chief, Industrial Hygiene Laboratory, Industrial Hygiene Division, Public Health Service, Bethesda 14, Maryland.

THE chemical industry in America has undergone a phenomenal growth since World War I. Previous to that time we were largely concerned with the production of heavy chemicals. We had been dependent upon outside sources, which later became enemy sources, for much of our supply of fine chemicals. However, the past twenty-five years have witnessed a truly extraordinary growth of the chemical industry in this country. We not only produce both fine and heavy chemicals but also lead in the production of new substances and materials.

All this growth and expansion was not achieved without injuries and deaths in industry. The remarkable thing is that, relatively, there have been so few fatalities in the chemical industry itself. The chemical industry is well aware of the danger of injury from its raw materials, intermediates and final products. It has instituted protective means of the most elaborate type to prevent injury to its workers. It has constantly been on guard against dangerous substances and, barring accidents or breakdowns of equipment, has been most successful in handling or manufacturing material of the most toxic type. Improved methods of ventilation have been used freely, and procedures have been evolved in many cases to make processes either automatic or completely enclosed from raw material to finished product.

While the chemical industry has reduced hazards within its own sphere to a minimum, this is not always true of consumer industries. The latter may range from very large plants employing thousands of workers to very small plants, such as packaging plants, staffed with a half-dozen employees. All too frequently, the consumer industries use chemical products without appreciation of the hazards and employment of the safeguards used by the producer industries.

Parallel with the expansion of the chemical industry and with the safeguards which it has instituted, there has been an active growth in industrial hygiene, and particularly industrial toxicology, in the United States. More and more the worker is protected against any toxic effect of his work materials. Apart from any

social consciousness in industry in general, it is good business to keep employees well and healthy. The active participation of the Division of Hygiene of the United States Public Health Service in field investigations in industry, in recommendations for the control of environmental conditions of employees, in the investigation of toxic substances and in the initiation of means of minimizing or ameliorating exposure to injurous chemical substances has steadily grown during the past two decades.

Industrial chemical processes are but greatly magnified bench operations of the chemist. The furnace, test tube, beaker, and distillation apparatus have been translated by the engineer into vast-scale operating units with the resulting production of huge masses of material. Where the chemist is concerned with grams, the chemical industry is concerned with perhaps thousands of tons. What, to the chemist, is a whiff of disagreeable gas or a splash of acid may, in industry, mean the disabling or even death of many employees. As the horizon of the chemical industry has expanded, more attention has been directed to the prevention of such casualties. At the same time, there has been a growing appreciation of the conditions under which employees are subjected to an environment unfavorable to health.

Studies of New Materials

Poisoning from various toxic substances and disability arising from an unhygienic environment in general have received increasingly extensive investigation. Numerous related problems have been met as more and more information has been required, both with reference to well-known toxic materials and to new substances in use in the chemical industries. This service has been intensified since the war began. Not only have unusual materials, concerning the toxicity of which little was known, come into use but substitute materials of known toxicity also have been employed where other and safer materials were no longer available. At best, it is difficult to keep pace with industry as new materials are developed for commercial use. There is inevitably a time-lag between the industrial use of a substance and the availability of data regarding its toxicity.

The relation of occupational disease to the chemical industry largely revolves around questions of toxicity. The manufacture of injurious or toxic substances is not necessarily injurious to the health of workmen. In almost all cases it is possible to avoid or to diminish risks by suitable arrangements or regulations. It is essential, however, to know what these health risks are. Sometimes this information is difficult to acquire, and occasionally substances which had been previously

thought to be more or less innocuous are found to be dangerous in large-scale operations where exposure may be heavy. Investigative priority must be placed upon those substances which act upon the organism or which are absorbed without the victim being aware of it.

Many substances produce poisoning only after years of exposure to the dust, fume or gas as ordinarily handled in industry. Compounds of certain metals or the metal fume itself fall into this category, although some organic substances are equally reprehensible in this respect. In addition, the turnover of labor may be sufficient to conceal the fact that a given substance may be injurious. It is now recognized that the most dangerous and also the most insidious route of industrial poisoning by many substances is that of inhalation. For this reason, various protective devices, such as gas masks suitable to the environment and adequate exhaust ventilation, are now far more extensively used than was true only a few years ago. Substances which are particularly dangerous are those that can be absorbed by the unbroken skin. Nitro and amino-derivatives of the aromatic series fall in this classification. The chemical industry manufactures and treats large quantities of these materials, and their manipulation requires the greatest precaution, since contact with them may have grave consequences.

Industrial Hazards

The dangers which one might say are peculiar to the chemical industry include (a) explosions and the ignition of gases and liquids, (b) injuries due to burns from flames, molten metal, slag or other hot material, (c) lesions caused by steam, hot water or hot liquids, (d) caustic burns caused by corrosive substances such as acids or alkalies, and (e) the action of poisonous substances. Consideration of the extensive ramifications of the chemical industry and the great variety of its products shows that the magnitude of the task of conserving the health of its employees is far greater than in any other branch of industry.

Collectively, the potential dangers of manufacturing chemicals are greater than those of any other occupation. In addition to all the hazards to be found in industry in general, chemical manufacturing imposes an additional burden of handling very toxic substances. Individuals may be exposed to toxic dusts, fumes, vapors or gases; there is the possibility of ingesting small amounts of poisons through carelessness in handling materials; and there is the potential danger of many active skin poisons.

Severe injury and illness among the workers were common in the early days of the manufacture of chemical products. However, as the method of absorption of these substances into the body and as their physiological

action became better known, the methods of manufacture and handling were improved. The manufacture and treatment of these materials is now so little attended with danger that illness rarely develops except in cases of breakdown or accident in the plant. In general, the larger manufacturing plants exercise vigilant control over the health of their employees. The management is progressive in this respect and encourages and fosters control and protective aids wherever possible. The small plant is where one is most likely to encounter trouble. Since these plants operate with small profits and often with inadequate equipment, the workmen are likely to be neglected from the point of view of health. In occasional plants of this type one may find complete ignorance of the health dangers involved in operation. Much improvement has been noted in recent years in this respect, however. The stringent regulations of handling the common dangerous substances and the clear-cut labeling of chemical products have tended to make the management especially alert to the possibilities of danger to the health of the employees.

Toxicological information on many of the newer chemical products has failed to keep pace with the industrial demand. Unfortunately, this type of information can only be obtained after protracted experimentation, and the establishment of safe conditions of exposure for man requires most careful evaluation of all the factors of physiological response. The toxicity of a substance cannot be determined with the facility of an analytical determination or an evaluation of a physical constant. Hasty experimentation may not only be misleading; it may be dangerous. The early experimental work with certain substances of current interest, for example, indicated that these substances were harmless to warm-blooded animals, a finding that has since been proven to be erroneous. Only rigidly controlled experimental work therefore can be accepted as a criterion of toxicity. Without exact knowledge of the toxicology of the materials used, both the producer and user of such materials may face a serious situation with regard to human life.

Chemical Services Symposium

The Association of Consulting Chemists and Chemical Engineers, Inc., met April 25th, at 5:00 p.m. at the Shelburne Hotel, New York, N.Y., to hear a symposium on "Professional Chemical Services by Consulting Associates and Individual Consultants." Speakers were Dr. Robert S. Aries, F.A.I.C., of R. S. Aries and Associates, Brooklyn, and Charles Davidoff, New York, N.Y.

An Employment Advisory Service

Dr. William I. Harber, F.A.I.C.

Committee on Economic Status, Chicago Chapter AIC

(This talk, embodying a report of the Chicago Chapter's Committee on Economic Status, was presented for comment before a recent meeting of that Chaper.)

WHEN an individual is looking for a job, he remembers that it is important to make a good appearance. He wears his least-worn suit, white shirt, unstained tie, and has his shoes shined. At the interview he attempts to be modest while answering questions about himself, and discreet when asking questions about the company. This caution is born out of years of training that he is trying to sell himself to the company, and that it might not be considered wise to appear too inquisitive about company policies and practices. This deference sometimes traps the applicant into accepting a job with a company that has a high labor turnover, or a secretive attitude about its work so that chances for publication and recognition in the field are negligible.

The employer on the other hand, while also anxious to make a good appearance, feels less hesitance with regard to asking as many questions as he wishes of the prospective employee until he feels that he has the best picture of the makeup and abilities of the applicant that can be obtained from application forms and interview. That such information may not always be a reliable index of how the man works out is another matter. The employer tries his best with the accepted means at his command.

When the balance sheet is struck it usually shows that the employer has obtained more information, relevant and otherwise, than the applicant, and that usually the applicant leaves the interview wishing that he had had the courage to ask such questions as: What is the average length of service of your laboratory personnel at my level? Do you have a salary upgrading schedule? Are there specific criteria upon which salary increases are based? What are the salary ceilings for positions of varying responsibility within the organization? What are your separation policies? Do you give severance pay? Advance notice? Time off to seek a new job? These are questions certainly no more prying than: Do you own your own house? Do you have any other source of income? Have you ever been arrested? What church do you prefer?

A businessman might not hesitate

to extend credit to a well-known corporation whose reputation is established. But if an account should ask for credit about which he knew very little, he then would consult accredited sources for information. When an employer contemplates the risk of hiring a new employee, he checks his reputation by asking for letters of reference. This gives him some measure of security in making a decision.

For the applicant no such means exist. There is no agency for checking the employment rating of companies. Further, there is no way he can ask for references on behalf of the intended employer from present or past employees. There is nothing wrong with an applicant asking his intended employer to furnish references as to his company's character as a future boss. But it is probable that most employers would be surprised at such a request and would consider such an applicant "on the sharp side."

There could be a way of obtaining some picture of how an organization rates with respect to its present and past employees. That would be to send the members of our organization a questionnaire to which they would not have to attach their signatures, so that their answers would not be colored by any thought of gain by favorable replies nor fear of reprisal by critical remarks. The replies on each of the companies would be totaled. A member who is faced with the choice between two companies would send for the cumulative reports on these companies, and would be able to have a wider source of information for his decision.

Such a questionnaire is presented. While it makes no attempt to be definitive, it is believed to cover those questions which are important in deciding whether to take employment with a company. Some of the questions are self-apparent when the applicant visits the laboratory. Some questions may appear to be superfluous, since most employers will be glad to supply the information if asked.

Suggested Questionnaire

Company:_____ Address:_____

1. Number of years employed:_____
2. Average number of years between promotions:_____
3. Positions held: _____ Salaries: _____
4. Estimated salaries for the following positions:
   - Research Director _____
   - Section Head (or equivalent) _____
   - Group Leader _____
   - Individual Research Worker _____
5. Time between salary increases: Maximum_____ Minimum_____

6. Terminal Practices:
   Severance pay _____weeks_____none
   Advance notice _____weeks_____none
   Time off to seek new job _____weeks_____none
7. Attitude toward publication of research:_____good_____fair_____poor
8. Encourage attendance at scientific meetings?_____yes_____no
   Defer costs?_____wholly_____partly_____none.
9. Laboratory facilities: _____good_____fair_____poor
   Library facilities: _____good_____fair_____poor
10. Sick leave:_____weeks per year
    Group health insurance plans: _____yes_____no
    Group life insurance: _____yes_____no
    Medical services:_____good_____fair_____poor_____none
11. General attitude of employees toward management:_____good_____fair_____poor
12. General attitude of management toward employees:_____good_____fair_____poor
13. How would you rate this company on an overall basis:_____excellent_____fair _____poor?

Symposia scheduled for the Boston Regional Meeting of the American Institute of Chemical Engineers, at New Ocean House, Swampscott, Mass., May 28th to 31st, include "Ultrasonics" and "Fluidization". The former will be lead by Prof. Dudley Thompson of Virginia Polytechnic Institute; the latter by Prof. E. R. Gilliland of Massachusetts Institute of Technology.

Pan American Refining Corporation will continue its policy of granting graduate study fellowships in chemistry and chemical engineering, for the academic year 1950-1951. Evaluation of the Fellows to be selected is made by University authorities. Fellowships are supported at the University of Illinois, the Massachusetts Institute of Technology, Rice Institute, the University of Texas, and the University of Oklahoma.

Woman Chemist, F.A.I.C.

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Available

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Silicon Nitride
Manganous Oxide
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North Jersey Chemical Center?

Dr. S. G. Gallo, F.A.I.C.

Chairman, Committee on Permanent Headquarters, New Jersey Chapter

FOUR thousand chemists and scores of laboratories and consulting firms in North Jersey could and should have a "Chemical Center". Perhaps an entire building for the purpose would as a starter appear ambitious, but a single floor of an appropriate building with an auditorium and lounge would appear to be within reach. With the proper support, dining facilities and a bar might also be included, which could be set up so as to be largely self-supporting.

As for the financing of such facilities, a substantial portion of the expense could be borne by a select group of tenants—chemical consultants, laboratory and chemical supply representatives, etc., who would have much to gain from such a location and who, therefore, should be willing to help support the additional facilities. The benefits, both tangible and intangible, to be derived by these select tenants could not be obtained anywhere at any price except in a chemical center where researchers and executives alike would assemble at regular intervals. It is worthy of note that a suitable meeting room with adjoining lounge would in itself be partially self-supporting through rentals to other groups, thus relieving the load on tenants.

Perhaps the cost of furnishings could be defrayed by contributions from the numerous industrial research institutions in the area and by bequests from individuals in the profession who have long felt the need for such a center. The balance of the funds could be obtained through membership dues — perhaps based on a sliding scale depending on proximity, similar to the system employed by The Chemists' Club in New York City.

Not Competitive

A Chemical Center in the Newark area would not be competitive with The Chemists' Club in New York, inasmuch as a great majority of the chemists in North Jersey do not now and probably never will find The Chemists' Club sufficiently accessible. Moreover, The Chemists' Club could not serve as a regular meeting place for the New Jersey AIC (or North Jersey ACS).

Monuments to the Profession

It has been suggested on numerous occasions that a part of the program for improving the professional status of the chemist should be devoted to the education of the public—advertising so to speak. It would appear

to be a most effective form of advertising to have a building, designated as Chemical Center, in the heart of a city along with medical and professional arts buildings—a place where chemists could assemble, meet professional and business acquaintances, dine with a visiting chemist, or better, a political dignitary.

Logical Function of A.I.C.

The sponsorship and administration of Chemical Centers wherever the number of chemists justifies it, would appear to be a logical function of the A.I.C. since the INSTITUTE has always been concerned with the professional side of the chemist. The question is often raised as to the advantages of A.I.C. membership. When discussing the question with non-members, the one argument that the writer has found most acceptable is that it brings one in contact with a group of chemists that one might not get to know in other circles.

If this, then, can be conceded an important benefit to be derived from membership in the A.I.C., we should endeavor to increase our stock in trade by creating more opportunity for making and maintaining professional contacts. There is no better way of doing this than by having a permanent headquarters and a favorable atmosphere.

A few among us outside of New York, have felt acutely the need or desirability for expanding professional contacts, have joined The Chemists' Club only to find that we cannot avail ourselves of the facilities because of inaccessibility. In the writer's opinion, one of the main services rendered by The Chemists' Club appears to fit hand in glove with certain of the professional objectives of the A.I.C. A chemical center in the Newark area would extend these services to the large number of chemists in North Jersey.

Shift in Emphasis Desirable

More of our time and money in the A.I.C. should be directed toward the purely professional side to demonstrate more and more clearly the differences in its functions as compared to technical societies. We should take over the responsibility of maintaining and improving the intra-professional and extra-professional (or public) relations for the chemical profession.

Perhaps with a curtailment of some marginal activities of the INSTITUTE, membership in such a *"Center"* could be made available to A.I.C. members at reduced fees. Indeed, if the financing and administration of such centers could be handled entirely through the A.I.C. it would provide a most powerful incentive for membership in the INSTITUTE.

There is a distinct possibility of obtaining the above facilities in a new air-conditioned office building to be erected in the Newark business center, with parking facilities for

700 cars. A spokesman for the backers has been contracted and found to be encouragingly sympathetic. In fact, if several floors of the building can be occupied by representatives of the chemical profession (including suppliers), we may have the privilege of naming the building to suit ourselves. The writer would appreciate hearing from potential tenants who would consider renting office space, if such a chemical center were established in Newark. Any comments or suggestions on the above proposals will also be appreciated. Please address your comments to Dr. S. G. Gallo, 54 B Garden Drive, Roselle, New Jersey.

At the meeting of the Commercial Chemical Development Association, in New York, N.Y., March 21st and 22nd, Dr. Donald B. Keyes, F.A.I.C., vice president, Heyden Chemical Corporation, spoke on "The Influence of Government Research on Chemical Development." Robert L. Taylor, F. A.I.C., editor of *Chemical Industries*, acted as moderator for the panel on "American Participation in International Chemical Development." C. C. Concannon, F.A.I.C., chief of Chemical Division, Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, D.C., addressed the meeting on "The Status of Chemical Production Abroad."

A Column of Advice on Personal Problems

Please send all requests to Chemists' Advisory Committee, c/o The Chemist, 60 East 42nd Street, New York 17, N.Y.

No answer can be complete or entirely satisfactory. The committee or one of its members will be glad to meet with individuals by appointment, for further discussion of their problems.

Inquiry No. 14

I have synthesized a new organic compound which I feel has good potentialities as a plasticizer for protein fibers and plastics. How may I go about raising capital (about $50,000.) for its manufacture?

Answer

If this synthesis was worked out on your own time outside of your regular place of work and it is your property, we would advise you to first investigate its economics of production and its sales and profit possibilities. This should be drawn up as a report for presentation to prospective investors. Unless the product is patented or you have applied for a patent, disclosure of the essential details or materials should not be included in the report.

Small financing is usually obtained from friends or other individuals and certain companies set up for this purpose. They will not advance money unless the prospects of safety and profit look good. The report mentioned above is of paramount importance. You should have the assistance of an accountant and an attorney in this connection.

The Chemists' Advisory Committee will

be glad to study this report and give you its constructive criticism with suggestions as to where to go for financing, if desirable.

Inquiry No. 34

I am definitely interested in making a change from my present position. I have been out of school for fifteen years and in that time have advanced to the position of group leader. Because of the nature of my work and company policy, I am not well known but I believe that I am capable of handling a job of considerable greater responsibility than seems to be open to me in my present firm.

I understand that there are a number of really effective executive placement agencies specializing in technical placement but I have no means of separating the "wheat" from the "Chaff." Can you help me?

Answer

Since the Chemists' Advisory Committee can hardly advertise any particular agency or agencies, we cannot give you any names in this column. The Secretary of the Committee, however, has circularized the membership of the committee and has collected their opinions. If you will get in touch with him, he will personally advise you.

Inquiry No. 77

I have been working as a research assistant for a large industrial research organization since I received the Bachelor's degree three years ago. In order to increase my opportunities, I am considering advanced training but I am uncertain as to the general direction I should take, namely, should I continue with Technical courses or should I lean toward the business or administrative division of chemical industry.

Answer

In some cases personal aptitude tests have been helpful. At least one of our local universities does this work for a fair fee. There are private counselors as well. We shall be glad to arrange an appointment for you with one or more members of our committee after you have taken such a test, to give you the benefit of our experience.

Inquiry No. 78

I have been working two years for a large internationally-known corporation. The working conditions are excellent and the salary fair. I have been told that promotions are slow and that there are hundreds ahead of me. My prospects apparently are a secure job with eventual retirement on a small pension. Should I change to a more risky job with better prospects? I seem to be in a blind alley.

Answer

Yours is a situation that confronts many chemists at times. In favor of sticking to the job, the following might be said:

1. That management and policies change frequently.

2. Sometimes the young chemist's judgment is swayed by what he hears others say, some of whom cannot see the forest for the trees.

3. Security is not to be discouraged in a changing economy.

On the other hand, if your dissatisfaction with your job prevents giving your all to it; if your interests are broad and you contemplate building your own business some day, or hope to advance more rapidly, you should seek a position with a smaller company where your experience and training will be felt beyond your immediate environment. When men seek prizes, danger to security is inherent. High mountains are not scaled by the timid.

The Federation of Paint and Varnish Production Clubs has established a graduate fellowship in chemical engineering at Illinois Institute of Technology. Applications should be sent to the dean of the graduate school of the Illinois Institute of Technology, Chicago 16, Illinois, before July first.

The Massachusetts Institute of Technology announces a two-week program in High-Temperature Ceramics at the Institute in Cambridge, August 7th to 18th. For information, write to Prof. Walter H. Gale, Room 3-107, MIT, Cambridge 39, Mass.

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Lincoln T. Work, *At-Large*

March Meeting

The 265th meeting of the National Council, AIC, was held March 8, 1950, at 6:00 p.m. at The Chemists' Club, New York, N.Y. Vice President Raymond E. Kirk presided. President Flett was present during the last half of the meeting.

The following officers and councilors were present: Messrs. C. C. Concannon, M. L. Crossley, L. H. Flett, K. M. Herstein, F. A. Hessel, R. E. Kirk, C. P. Neidig, E. H. Northey, R. P. Parker, H. Robinette, Jr., L. Van Doren, J. R. Withrow, L. T. Work, and Miss F. E. Wall. V. F. Kimball was present.

The minutes of the preceding meeting were approved.

The Secretary presented a letter from The President's Water Re-

sources Policy Commission. The Secretary was requested to acknowledge the letter, stressing the importance of our diminishing water reserves, and expressing the interest of chemists in water as a chemical resource.

The Treasurer's report was accepted.

Dr. Work reported as chairman of the Program Committee for the Annual Meeting.

Dr. Parker reported that the New Jersey Chapter had taken advantage of the new constitution provided by the Council for the Chapters, and that at the recent Chapter meeting, an amendment to the Chapter by-laws was made to permit Members as well as Fellows to vote.

Dr. Withrow reported that he will serve as AIC delegate to the 100th Anniversary celebration of the University of Dayton. He had recently attended the inauguration of the president of Geneva College.

Mr. Concannon reported for the Washington Chapter.

Mr. Robinette reported on the activities of the Pennsylvania Chapter. Mr. Herstein reported the New York Chapter's successful meeting at which Honorary Membership was presented to Frank G. Breyer.

Upon motion, it was decided that Contributing Editors to The Chemist should be appointed for a one-year term. Thanks were given to the present board of Contributing Editors, who have served so long and loyally.

President Flett announced that he would attend the first meeting of the New England Chapter, March 20th, in Boston, where he would present the certificate of Honorary Membership to Dr. Gustavus J. Esselen.

The following new members were elected:

FELLOWS

Crowe, James M.
Executive Editor, Industrial & Engineering Chemistry, 1155 16th Street, N. W., Washington 6, D. C.

de Monsabert, Winston R.
Assistant Professor of Chemistry, Loyola University, New Orleans, La.

Erickson, Wallace A.
President, Wallace A. Erickson & Co., 842 N. Wells St., Chicago 10, Ill.

Field, David
Chief Chemist, in charge of Sanitation & Laundry Bureau, Department of Correction, City of New York, 100 Centre St., New York, New York.

Fisher, Austin W., Jr.
Senior Chemical Engineer, Arthur D. Little, Inc., 30 Memorial Drive, Cambridge 42, Mass.

Hass, Henry B.
Manager, Research & Development, General Aniline & Film Corp., 230 Park Ave., New York, New York.

Hirsch, Marx
President & Chairman of Board, Molybdenum Corporation of America, 500 Fifth Avenue, New York, N.Y.

Kaye, Sidney
Toxicologist, Chief Medical Examiner's Office, Commonwealth of Virginia, Richmond, Va.

Lindgren, Vincent V.
New Product Development Engineer, American Cyanamid Co., 30 Rockefeller Plaza, New York, New York.

Meredith, George B.
Chief Chemist, South Point Plant, Solvay Process Division, Allied Chemical & Dye Corp., South Point, Ohio.

Newton, Wilbert F.
Manager, Market Research & Development, Columbia Chemical Division, Pittsburgh Plate Glass Company, Pittsburgh 13, Pa.

Quaintance, Carrol B.
Patent Solicitor, Pollard & Johnston, 11 W. 42nd St., New York 18, N.Y.

Remer, Don D.
Director, Petroleum Lab., California Testing Labs., Inc., 1429 Santa Fe Ave., Los Angeles, Cal.

Schultz, Raymond F.
Director, Hercules Experiment Station, Hercules Powder Co., Wilmington, Delaware.

Shanley, Edward S.
Research Chemist, Research Department, Buffalo Electro-Chemical Co., Buffalo, N. Y.

Shultz, Robert C.
Research Associate, Pharmaceutical Chemistry, Sharp & Dohme, Inc., Glenolden, Pa.

Tarr, Philip R.
Assistant to Executive Vice President, Monsanto Chemical Co., St. Louis 4, Missouri.

MEMBERS

Fraser, David A.
Chemist, Industrial Hygiene Division, U.S. Public Health Service, Bethesda, Maryland.

Gerard, Lester C., Jr.
Chemical Engineer, Research, Valite Corporation, Lockport, Louisiana.

Kuzmickey, Michael
Process Control Chemist, Sulfur Color Dye Department, Calco Chemical Div., American Cyanamid Co., Bound Brook, N.J.

Sandvig, Robert L.
Instructor of Chemistry, Chemistry Department, South Dakota School of Mines & Technology, Rapid City, South Dakota.

Savitt, Sidney A.
Sales Engineer, Consolidated Products Co., 15 Park Row, New York 7, N.Y.

Shanley, Thomas R.
Group Leader, Pharmaceutical Lab., Calco Chemical Division, American Cyanamid Co., Bound Brook, N.J.

Small, Solomon P.
Chemist, Research Laboratory, National Sugar Refining Co., 1227 N. Delaware Avenue, Philadelphia, Pa.

ASSOCIATES

Connell, John W.
Salesman, Chemical Sales, American Maize Products Co., 100 E. 42nd St., New York, N.Y.

Friedlander, Henry Z.
Assistant, Chemistry Department, University of Illinois, Urbana, Ill.

Martin, William F.
Chemist, Bureau of Human Nutrition & Home Economics, U.S. Department of Agriculture, Beltsville, Maryland.

Wheeler, Barbara
Biological Control Section, Harrower Laboratory, 2117 Franklin St., St. Louis, Missouri.

RAISED FROM FELLOW TO LIFE MEMBER

Freedman, Louis
Vice President in Charge of Research, U. S. Vitamin Corporation, 250 East 43rd Street, New York 17, N.Y.

Necrology

V. Joseph Altieri

Eastern Gas and Fuel Associates, the coal and coke chemicals, associated hydrocarbon industries, and his many other friends lost an able and devoted worker and friend in the death, February 10, 1949, of V. Joseph Altieri. He had been suffering longer than his associates knew, but he carried on with his customary disregard for personal comfort to the very end.

He was born in Watertown, Mass., September 29, 1901. He was graduated from Massachusetts Institute of Technology, School of Chemical Engineering Practice, with the degree of B.S. in 1923. He then worked at M. I.T. as research associate until he began his work at New England Fuel and Transportation Company's (now Eastern Gas and Fuel Associates) plant in 1924. From then, as chief chemist, until his death, his was a life full of many of the details of developing and operating a modern coke plant and coke laboratory, to which he gave unstintingly of his mind, his time, and his energy.

He spent himself building up the system of laboratory operation which depends for its authenticity on a sound base in the fundamentals of science and close cooperation with authorities in the field of materials testing the world over. He contributed to the utmost in many such groups. He was a member of the American Gas Association, The New England Gas Association, The American Society for

Testing Materials, the A.S.T.M. New England District Council, the American Chemical Society, and a Fellow of THE AMERICAN INSTITUTE OF CHEMISTS.

Among his publications were: "Coal Expansion," "Measurement of the Expansion of Coal During Carbonization," "Stress and Strains Generated During Carbonization," "Selection of Coals for Wartime Carbonization by Means of an Improved Engineering Model of the Coke Oven," "Gas Chemists' Books of Standards for Light Oils and Light Oil Products," and "Gas Analysis and Testing of Gaseous Materials."

He was chairman of the A.G.A. Chemical Committee, 1943-1944, and served as chairman and member of numerous subcommittees. As a member of the Revision Committee for the *Gas Chemists Handbooks*, he completed a much needed modernized revision of the Gas Analysis section, up to 1945, long overdue, as well as the Light Oils Section.

At the time of his death he was active in the following capacities in the American Society for Testing Materials: Vice chairman of Committee D-16 on Industrial Aromatic Hydrocarbons; Member of Committee D-3 on Gaseous Fuels; Consulting member of Committee D-5 on Coal and Coke, and Chairman of the New England District Council.

He completed many vital projects in these committees and it is now a challenge that work to be continued shall receive adequate attention and backing. This includes such important subjects as the "Determination of Pressures Developed During the Coking of Coal." The amount of thought and work he put into this was tremendous; his work has pointed the way in which further information is needed for the safe operation of coke ovens. Along with the work of the Committees of the American Coke and Coal Chemicals Institute, of which he was an active Associate Member, much of the work covered in A.G.A. committees and under consideration for operating methods of theA.S.T.M. will be continued. He will be remembered wherever it may be done.

Mr. Altieri was a firm believer in the purposes of THE AMERICAN INSTITUTE OF CHEMISTS. He felt, as do most chemists, that much is needed to be done in maintaining professional standards and in giving industry and the public a correct appreciation of chemists, and to chemists themselves, what they must do to maintain professional standards and usefulness to industry and the public.

—M. C. Cryan

Reprinted

The article by Dr. M. L. Crossley, Hon. A.I.C., which appeared in Vol. XXIV, No. 6, of THE CHEMIST, was reprinted in the May, 1949, issue of the *Bulletin* of the Virginia Sections of the American Chemical Society.

Local Chapter News

C. P. Neidig, F.A.I.C.

New York

Chairman, Martin Meyer
Vice Chairman, Lincoln T. Work
Secretary-treasurer, M. J. Kelley
Publicity, Guy A. Kirton
Representative to National Council, Karl M. Herstein

The Annual Honors Meeting will be held at the Hotel Commodore, New York, N.Y. on May 24th, when The Honor Scroll for 1950 will be presented to Dr. Wayne E. Kuhn, F.A.I.C., manager of the Technical and Research Division of The Texas Company.

The Chapter's annual Student Medals will also be presented to ten outstanding members of the senior classes of metropolitan colleges and universities.

Officers for 1950-1951 will be elected. (A full report will appear in the June issue of THE CHEMIST.)

New University of Maine Pulp and Paper Foundation

A new University of Maine Pulp and Paper Foundation was announced, February 22nd, at a luncheon meeting of the Maine Pulp and Paper Alumni in New York. The Foundation fosters a six-point program: To interest more students to select the pulp and paper program; to provide loans and scholarships; to offer an attractive curriculum; to screen outstanding students, who have completed three or four years of college, for a five-year course stressing operational management; to augment the staff with personnel experience in production management, and to advance fundamental and applied research for the pulp and paper industries.. Members of the finance committee for the Foundation are J. L. Ober, vice president, Scott Paper Company, Chester, Pa.; P. S. Bolton, research director, Robert Gair Company, Inc., Uncasville, Conn.; John B. Calkin, F.A.I.C., director, Department of Industrial Cooperation, University of Maine; F. A. Soderberg, General Dyestuff Corporation, New York, and Ralph A. Wilkins, F.A.I.C., vice president, Bird and Son, Inc., East Walpole, Mass.

Briod to Aries & Associates

Andre E. Briod, F.A.I.C., for eighteen years with Nopco Chemical Company, is now connected with R. S. Aries & Associates, consulting engineers of New York. He will devote his efforts to commercial development problems, principally in the food and pharmaceutical fields, in the U.S. and abroad.

Kolthoff Receives Fisher Award

Prof. I. M. Kolthoff, F.A.I.C., head of the Division of Analytical Chemistry at the University of Minnesota, received the $1,000 Fisher Award in analytical chemistry at the Houston, Texas, meeting of the American Chemical Society. In 1949, Professor Kolthoff received the William H. Nichols Medal of the New York Section of the Society for "world leadership in analytical chemistry."

A Delegate Reports

To the A.I.C.

Pursuant to instruction from President Lawrence Flett, I represented THE AMERICAN INSTITUTE OF CHEMISTS at the inauguration of William Bay Irvine as President of Marietta College and attended the Inauguration Day Program, the Educational Symposium on "The Place of Liberal Arts in American Life," the official luncheon preceding the inauguration ceremonies; marched in the gowned and hooded academic procession through the Campus among the Learned Societies, walking with the delegate of the American Mathematical Society, immediately ahead of the representative of the American Medical Association, and was seated in the auditorium in rotation immediately in front of the speaker of the occasion, my neighbor Senator Robert A. Taft, who was introduced by an old friend and employer, Ex-Governor George White. Senator Taft spoke on "Educational Freedom and Federal Aid." As the official representative of the INSTITUTE, I was listed among the delegates.

Needless to say the occasion was made especially enjoyable at this perhaps oldest of Ohio Colleges by the number of my own former students who came forward in greeting, as well as the seeing of friends among the distinguished educators and industrialists present, and it was by no means uninteresting to see again the distinguished chemist, James Lewis Howe of Washington and Lee University.

The announced program of the new president of Marietta College, Dr. William Bay Irvine, is to give himself continually to the cause of education.

—Dr. James R. Withrow, Hon. AIC

Dr. Gustav Egloff, Hon. AIC, addressed the American Society of Tool Engineers, Jan. 10th, on "Oil in Industry." January 28th, he participated in a panel discussion of the status of the professional engineer, held by the Illinois Society of Professional Engineers, at Decatur, Ill. As president of the Western Society of Engineers, Dr. Egloff met with Illinois Governor Stevenson, January 10th, to consider the feasibility of holding a Spring Conference designed to reduce motor vehicle accidents in the state.

Condensates

Ed. F. Degering, F.A.I.C.

Armour Research Foundation

A powder, which is thinned with water and resembles varnish in appearance, is a fire-retardant paint, developed by Sherwin-Williams Company, which creates an inch-thick, insulating, marshmallow-like substance when exposed to extreme heat or flames.

Apple slices for apple pie may be firmed by cooking them in a 0.1 to 1% solution of calcium chloride, depending on the type of apple used.

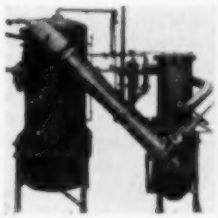
Guaranteed security simply means that what you do not do for yourself will be made good by legalized piracy practiced on your more able neighbor.

—Crawford H. Greenewalt F.A.I.C.

Enzymes in premeasured units, capsuled like large vitamin pills, are now available industrially from Pillsbury Mills, Inc.

The leather industry imports annually about $48,000,000 of tannin extract from South America and Africa.

Preliminary studies on rats indicate that cysteine affords some protection againt x-ray irradiation.



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For Your Library

Chemical Activities of Fungi

By Jackson W. Foster. Academic Press, Inc. 1949. *XVIII*—648 *pp.* $9.50.

This monograph deals with timely subjects such as mold metabolism, the chemical nature of the mold mycelium, mutations, genetics, biochemical synthesis, trace element nutrition of molds, and fermentation by molds. There are thirty-nine pages on penicillin and one wishes that the other important antibiotics were included in a book of this nature.

A perusal of this volume convinces one that any person interested in the chemistry of living things should own a copy of it.

—Dr. Henry Tauber, F.A.I.C.

Encyclopedia of Chemical Reactions

Vol. III C. A. Jacobson. Reinhold Publishing Corp. 1949. *xi* + 842 *pp.* $12.00.

This is the third volume of this encyclopedia. The present work includes the chemical reactions of the following elements: Cobalt, Columbium, Copper, Didymium, Dysprosium, Erbium, Europium, Fluorine, Gadolinium, Gallium, Germanium, Gold, Hafnium, Holmium, Hydrogen, Illinium, Indium, Iodine, Iridium. A total of 2757 reactions is presented. Obviously, only comparatively few reactions will be found under the rare elements. For instance, while this volume contains 822 and 610 reactions of cobalt and copper respectively, holmium and illinium are represented by one reaction each and hafnium by two.

The entries are based on the reactions of the elements in questions as encountered in the standard chemical journals and the literature reference is given with each entry. A list of journals used by the abstractors is included. Several indexes enhance the value of this work. This series may well become a standard work on inorganic chemical reactions and as such it will be extremely useful to chemists in general.

—William H. Van Delden, F,A.I.C.

Chemical Books Abroad

Rudolph Seiden, F.A.I.C.

• Bailliere, Tindall & Cox, London. (The Williams and Wilkins Co., Baltimore): *Bentley's Textbook of Pharmaceutics*, 5th ed., 1100 pp., 307 ill. (30s.) This famous standard work, first published in 1926, is now edited by Harold Davis in collaboration with a number of English experts. After a historical review of the British Pharmacopeia (and it is suggested that this chapter be expanded to include the pharmacopeias of other countries as well, and the U.S.P. in particular), the "Bentley" uses over 230 pages to discuss general physico-chemical principles and small-scale apparatus, then goes into detail in describing pharmaceutical manufacturing (180 pages), dispensing (140 pages), pharmaceutical microbiology (170 pages), surgical dressings, sutures and ligatures(45 pages) and finally—in 34 chapters—the various types of pharmaceutical preparations, examples of which were taken from "worksheets" used in pharmacies and factories. After hours of looking through the pages of this volume, only two "errors" could be detected—Tincture Nux Vomica does not discolor when mixed with ammonia (this was true decades ago, before defatted nux vomica was used as raw material), and the solubilities tables mentioned on page 1070 are missing. Nevertheless, authors and publishers are to be congratulated for a great job, well done! *A Text-Book of Pharmacognosy*, by George Edward Trease, 5th ed., 811 pp., 276 ill., 9 maps. (30s) General principles of pharmacognosy, drugs of vegetable and animal origin, and their chemistry and microscopy are discussed in the five chapters of this well-known work, which in scope extends beyond the medicinal drugs contained in pharmacopeias: it also includes many of the commercial natural materials used in paper, textile, insecticide, beverage, and food industries.

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National Council Meeting

The next meeting of the National Council, A.I.C., will be held June 14, 1950, at The Chemists Club, New York, N.Y., at 6:00 p.m.

Condensates *(Cont.)*

Tetron, produced by Eston Chemicals, Inc., is a non-residual organic phosphate contact insecticide, for the control of aphids, spidermites, and similar soft-bodied, sucking insects.

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—James E. Woodhouse

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